

**What is Claimed:**

1. A resource management system for a host computer, comprising:  
a resource database for storing indices to system resources of said host computer;  
a resource management software application that assigns system resources of said host computer and maintains a memory allocation page map of said resource database including indices to the assigned system resources in said resource database,  
wherein said memory allocation page map is organized according to a tiered page size model including a hierarchy of scales using  $2^x$  as a scaling factor whereby an index page at each tiered page size level may allocate  $2^x$  memory blocks at a size of the next lower tiered page size level.
2. The resource management system of claim 1, wherein said resource management software application stores a descriptor for each assigned system resource at an index [G,M,K] in said memory allocation page map defined as  $\text{Mem}(G,M,K) = ((G*2^{10} + M)*2^{10} + K)*2^{10} * (\text{word size})$ , where word size is a power of 2.
3. The resource management system of claim 2, wherein  $x=10$  and wherein a descriptor is stored in said memory allocation page map as a 32 bit index (2, 10, 10, 10) into a map of 4k pages that identifies the descriptor with said index, where a first bit indicates suballocation in smaller pages and three successive  $2^{10}$  values identify scaled pages.
4. A method of managing memory of a host computer, comprising the steps of:  
storing indices to system resources of said host computer in a resource database;  
maintaining a memory allocation page map of said resource database including indices to assigned system resources in said resource database; and  
organizing said memory allocation page map according to a tiered page size model including a hierarchy of scales using  $2^x$  as a scaling factor whereby an index page at each tiered page size level may allocate  $2^x$  memory blocks at a size of the next lower tiered page size level.
5. The method of claim 4, further comprising the step of storing a descriptor for each assigned system resource at an index [G,M,K] in said memory allocation page map defined as  $\text{Mem}(G,M,K) = ((G*2^{10} + M)*2^{10} + K)*2^{10} * (\text{word size})$ , where word size is a power of 2.

6. The method of claim 5, wherein  $x=10$  and said storing step comprises storing a descriptor in said memory allocation page map as a 32 bit index (2, 10, 10, 10) into a map of 4k pages that identifies the descriptor with said index, where a first bit indicates suballocation in smaller pages and three successive  $2^{10}$  values identify scaled pages.